

# ANALYSIS

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## CONTENTS

LAW STATEMENTS AND COUNTERFACTUAL INFERENCE

Roderick M. Chisholm

TRUTH AS A PREDICATE

S. Korner

INCOMPATIBLE PROPERTIES

D. J. O'Connor

PUTNAM ON SYNONYMY AND BELIEF

Wilfrid Sellars

NOTES ON BACK OF COVER

TWO SHILLINGS AND SIXPENCE NET

ASIL BLACKWELL · BROAD STREET · OXFORD

OL

5

SS

5

P

55

MI

## LAW STATEMENTS AND COUNTERFACTUAL INFERENCE<sup>1</sup>

By RODERICK M. CHISHOLM

THE problems I have been invited to discuss arise from the fact that there are two types of true synthetic universal statement: statements of the one type, in the context of our general knowledge, seem to warrant counterfactual inference and statements of the other type do not. I shall call statements of the first type "law statements" and statements of the second type "non-law statements". Both law and nonlaw statements may be expressed in the general form, "For every  $x$ , if  $x$  is  $S$ ,  $x$  is  $P$ ". Law statements, unlike nonlaw statements, seem to warrant inference to statements of the form, "If  $a$ , which is not  $S$ , were  $S$ ,  $a$  would be  $P$ " and "For every  $x$ , if  $x$  were  $S$ ,  $x$  would be  $P$ ". I shall discuss (I) this distinction between law and non-law statements and (II) the related problem of interpreting counterfactual statements.<sup>2</sup>

### I

Let us consider the following as examples of law statements:

L1. Everyone who drinks from this bottle is poisoned.

L2. All gold is malleable.

And let us consider the following as examples of nonlaw statements:

N1. Everyone who drinks from — bottle wears a necktie.

N2. Every Canadian parent of quintuplets in the first half of the twentieth century is named 'Dionne'.

Let us suppose that L1 and N1 are concerned with the same bottle (perhaps it is one of short duration and has contained

<sup>1</sup> Read at the Western Division meeting of the American Philosophical Association, University of Illinois, May 7, 1954.

<sup>2</sup> Detailed formulations of this problem are to be found in the following works: W. E. Johnson, *Logic*, Vol. III, chapter I; C. H. Langford, review of W. B. Gallie's "An Interpretation of Causal Laws", *Journal of Symbolic Logic*, Vol. VI (1941), p. 67; C. I. Lewis, *An Analysis of Knowledge and Valuation*, Part II; Roderick M. Chisholm, "The Contrary-to-fact Conditional", *Mind*, Vol. 55 (1946), pp. 289-307 (reprinted in H. Feigl and W. S. Sellars, *Readings in Philosophical Analysis*); Nelson Goodman, "The Problem of Counterfactual Conditionals", *Journal of Philosophy*, Vol. 44 (1947), pp. 113-128 (reprinted in L. Linsky, *Semantics and the Philosophy of Language*); F. L. Will, "The Contrary-to-fact Conditional", *Mind*, Vol. 56 (1947), pp. 236-249; and William Kneale, "Natural Laws and Contrary to Fact Conditionals", *ANALYSIS*, Vol. 10 (1950), pp. 121-125. See further references below and in Erna Schneider, "Recent Discussion of Subjunctive Conditionals", *Review of Metaphysics*, Vol. VI (1953), pp. 623-647. My paper, referred to above, contains some serious errors.

only arsenic.) Let us suppose, further, that the blank in N1 is replaced by property terms which happen to characterize the bottle uniquely (perhaps they describe patterns of fingerprints). I shall discuss certain philosophical questions which arise when we make the following "preanalytic" assumptions. From L1 we can infer.

L1.1 If Jones had drunk from this bottle, he would have been poisoned.

and from L2 we can infer

L2.1 If that metal were gold, it would be malleable.

But from N1 we cannot infer

N1.1 If Jones had drunk from — bottle, he would have worn a necktie.

and from N2 we cannot infer

N2.1 If Jones, who is Canadian, had been parent of quintuplets during the first half of the twentieth century, he would have been named 'Dionne'.

I shall not defend these assumptions beyond noting that, in respects to be discussed, they correspond to assumptions which practically everyone does make.

There are two preliminary points to be made concerning the interpretation of counterfactual statements. (1) We are concerned with those counterfactuals whose antecedents, "if *a* were *S*," may be interpreted as meaning the same as "if *a* had property *S*". There is, however, another possible interpretation: "if *a* were *S*" could be interpreted as meaning the same as "if *a* were identical with something which in fact does have property *S*".<sup>1</sup> Given the above assumptions, N2.1 is false according to the first interpretation, which is the interpretation with which we are concerned, but it is true according to the second (for if Jones were identical with one of the Dionnes, he would be named 'Dionne'). On the other hand, the statement

N2.2 If Jones, who is Canadian, had been parent of quintuplets during the first half of the twentieth century, there would have been at least two sets of Canadian quintuplets.

is true according to the first interpretation and false according to the second. (2) It should be noted, secondly, that there is a respect—to be discussed at greater length below—in which our counterfactual statements may be thought of as being elliptical. If we assert L1.1, we might, nevertheless, accept the following qualification: "Of course, if Jones had emptied the bottle,

<sup>1</sup> Compare K. R. Popper, "A Note on Natural Laws and so-called 'Contrary-to-fact conditionals'", *Mind*, vol. 58 (1949), pp. 62-66.

cleaned it out, filled it with water, and *then* drunk from it, he might not have been poisoned." And, with respect to L2.1, we might accept this qualification: "If that metal were gold it would be malleable—provided, of course, that what we are supposing to be contrary-to-fact is that statement 'That metal is not gold' and *not* the statement 'All gold is malleable'."

Can the relevant difference between law and non-law statements be described in familiar terminology without reference to counterfactuals, without use of modal terms such as "causal necessity", "necessary condition", "physical possibility", and the like, and without use of metaphysical terms such as "real connections between matters of fact"? I believe no one has shown that the relevant difference *can* be so described. I shall mention three recent discussions.

(1) It has been suggested that the distinction between law statements and nonlaw statements may be made with respect to the universality of the nonlogical terms which appear in the statements. A term may be thought of as being universal, it has been suggested, if its meaning can be conveyed without explicit reference to any particular object; it is then said that law statements, unlike nonlaw statements, contain no nonlogical terms which are not universal.<sup>1</sup> (These points can be formulated more precisely.) This suggestion does not help, however, if applied to what we have been calling "law statements" and "nonlaw statements", for L1 is a law statement containing the nonuniversal nonlogical term "this bottle" and N1 (we have supposed) is a nonlaw statement all of whose nonlogical terms are universal. It may be that, with respect to ordinary usage, it is incorrect to call L1 a "law statement"; this point does not affect our problem, however, since we are assuming that L1, whether or not it would ordinarily be called a "law statement", does, in the context of our general knowledge, warrant the inference to L1.1

(2) It has been suggested that the two types of statement might be distinguished epistemologically. P. F. Strawson, in his *Introduction to Logical Theory*, suggests that in order to *know*, or to have good evidence or good reason for believing, that a

<sup>1</sup> Compare C. G. Hempel and Paul Oppenheim, "Studies in the Logic of Explanation", *Philosophy of Science*, Vol. 15, 1948, pp. 135-175 (reprinted in H. Feigl and M. Brodbeck, *Readings in the Philosophy of Science*). It should be noted that these authors (i) attempt to characterize laws with respect only to formalized languages, (ii) concede that "the problem of an adequate definition of purely qualitative (universal) predicates remains open", and (iii) propose a distinction between "derived" and "fundamental" laws. The latter distinction is similar to a distinction of Braithwaite, discussed below. See also Elizabeth Lane Beardsley, "Non-Accidental and Counterfactual Sentences", *Journal of Philosophy*, Vol. 46 (1949), pp. 373-391; review of the latter by Roderick M. Chisholm, *Journal of Symbolic Logic*, Vol. XVI (1951), pp. 63-64.

given nonlaw statement is true, it is necessary to know that all of its instances have in fact been observed ; but in order to know, or to have good evidence or good reason for believing, that a given law statement is true, it is *not* necessary to know that all of its instances have been examined. (We need not consider the problem of defining "instance" in this use.) "An essential part of our grounds for accepting" a nonlaw statement must be "evidence that there will be no more" instances and "that there never were more than the limited number of which observations have been recorded" (p. 199). Possibly this suggestion is true, but it leaves us with our problem. For the suggestion itself requires use of a modal term ; it refers to what a man *needs* to know, or what it is *essential* that he know, in order to know that a law statement is true. But if we thus allow ourselves the use of modal terms, we could have said at the outset merely that a law statement describes what is "physically necessary", etc., and that a nonlaw statement does not.

(3) R. B. Braithwaite, in *Scientific Explanation*, suggests that a law statement, as distinguished from a nonlaw statement is one which "appears as a deduction from higher-level hypotheses which have been established independently of the statement" (p. 303). "To consider whether or not a scientific hypothesis would, if true, be a law of nature is to consider the way in which it could enter into an established scientific deductive system" (Ibid). In other words, the question whether a statement is law-like may be answered by considering certain logical, or epistemological, relations which the statement bears to certain *other* statements. Our nonlaw statement N2, however, is deducible from the following two statements : (i) "Newspapers which are generally reliable report that all parents of quintuplets during the first half of the twentieth century are named 'Dionne'," and (ii) "If newspapers which are generally reliable report that all parents of quintuplets during the first half of the twentieth century are named 'Dionne', then such parents are named 'Dionne'." Statements (i) and (ii) may be considered as "higher level" parts of a "hypothetical-deductive system" from which the nonlaw statement N2 can be deduced ; indeed (i) and (ii) undoubtedly express the grounds upon which most people accept N2. It is not enough, therefore, to describe a nonlaw statement as a statement which "appears as a deduction from higher level hypotheses which have been established independently". (I suggest, incidentally, that it is only at an advanced stage of inquiry that one regards a synthetic universal statement as being a *nonlaw* statement.)



## II

Even if we allow ourselves the distinction between law statements and nonlaw statements and characterize the distinction philosophically, by reference, say, to physical possibility (e.g. "All S is P" is a law statement provided it is not physically possible that anything be both S and not P, etc.), we find that contrary-to-fact conditionals still present certain difficulties of interpretation.<sup>1</sup> Assuming that the distinction between law statement and nonlaw statement is available to us, I shall now make some informal remarks which I hope will throw light upon the ordinary use of these conditionals.

Henry Hiz has suggested that a contrary-to-fact conditional might be interpreted as a metalinguistic statement, telling us something about what can be inferred in a given system of statements. "It says that, if something is accepted in this system to be true, then something else can be accepted in this system to be true."<sup>2</sup> This suggestion, I believe, can be applied to the ordinary use of contrary-to-fact conditionals, but it is necessary to make some qualifying remarks concerning the relevant "systems of statements".

Let us consider one way of justifying the assertion of a contrary-to-fact conditional, "If *a* were S, *a* would be P". The antecedent of the counterfactual is taken, its indicative form, as a *supposition* or *assumption*.<sup>3</sup> One says, in effect, "Let us suppose that *a* is S", even though one may believe that *a* is not S. The indicative form of the consequent of the counterfactual—viz., "*a* is P"—is then shown to follow logically from the antecedent taken with certain other statements already accepted. This demonstration is then taken to justify the counterfactual. The point of asserting the counterfactual may be that of *calling attention to, emphasizing, or conveying*, one or more of the premisses which, taken with the antecedent, logically imply the consequent.

In simple cases, where singular counterfactuals are asserted, we may thus think of the speaker: (i) as having deduced the consequences of a singular supposition, viz., the indicative form of the counterfactual antecedent, taken with a statement he

<sup>1</sup> Modal analyses of law statements are suggested by Hans Reichenbach, *Elements of Symbolic Logic*, Ch. VIII, and Arthur Burks, "The Logic of Causal Propositions", *Mind*, Vol. LX (1951), pp. 363-382.

<sup>2</sup> Henry Hiz, "On the Inferential Sense of Contrary-to-fact Conditionals", *Journal of Philosophy*, Vol. 48 (1949), pp. 586-587.

<sup>3</sup> Compare S. Jaskowski, "On the Rules of Suppositions in Formal Logic", *Studia Logica*, No. 1 (Warsaw, 1934), and A. Meinong, *Über Annahmen*, concerning this use of "assumption."

interprets as a law statement; and (ii) as being concerned in part to call attention to, emphasize, or convey, the statement interpreted as a law statement. We can usually tell, from the context of a man's utterance, what the supposition is and what the other statements are with which he is concerned. He may say, "If that were gold, it would be malleable"; it is likely, in this case, that the statement interpreted as a law statement is L2, "All gold is malleable"; it is also likely that this is the statement he is concerned to emphasize.

F. H. Bradley suggested, in his *Principles of Logic*, that when a man asserts a singular counterfactual "the real judgment is concerned with the individual's *qualities*, and asserts no more than a connection of adjectives."<sup>1</sup> Bradley's suggestion, as I interpret it, is that the *whole* point of asserting a singular counterfactual, normally, is to call attention to, emphasize, or convey the statement interpreted as a law statement. It might be misleading, however, to say that the man is *affirming* or *asserting* what he takes to be a law statement, or statement describing a "connection of adjectives", for he has not formulated it explicitly. It would also be misleading to say, as Bradley did (p. 89), that the man is merely *supposing* the law statement to be true, for the law statement is something he *believes*, and not merely supposes, to be true. If he were merely supposing "All gold is malleable," along with "That is gold", then it is likely he would include this supposition in the antecedent of his counterfactual and say "If that were gold and if all gold were malleable, then that would be malleable". Let us say he is *presupposing* the law statement.

We are suggesting, then, that a man in asserting a counterfactual is telling us something about what can be deduced from some "system of statements" when the indicative version of the antecedent is added to this system as a *supposition*. We are referring to the statements of this system (other than the indicative version of the antecedent) as the *presuppositions* of his assertion. And we are suggesting that, normally, at least part of the point of asserting a counterfactual is to *call attention to, emphasize, or convey*, one or more of these presuppositions.

The statements a man presupposes when he asserts a counterfactual will, presumably, be statements he accepts or believes. But they will not include the denial of the antecedent of his counterfactual (even if he believes this denial to be true) and

<sup>1</sup> Op. cit., p. 90. Compare D. J. O'Connor, "The Analysis of Conditional Sentences", *Mind*, Vol. LX (1951), p. 360; Robert Brown and John Watling, "Counterfactual Conditionals", *Mind*, Vol. LXI (1952), p. 226.



they will not include any statements he would treat as nonlaw statements.<sup>1</sup> And normally there will be many other statements he believes to be true which he will deliberately exclude from his presuppositions. The peculiar problem of interpreting ordinary counterfactual statements is that of specifying which, among the statements the asserter believes, he intends to *exclude* from his presuppositions. What statements he will exclude will depend upon what it is he is concerned to call attention to, emphasize, or convey.

Let us suppose a man accepts the following statements, taking the universal statements to be law statements: (1) All gold is malleable; (2) No cast-iron is malleable; (3) Nothing is both gold and cast-iron; (4) Nothing is both malleable and not malleable; (5) That is cast-iron; (6) That is not gold; and (7) That is not malleable. We may contrast three different situations in which he asserts three different counterfactuals having the same antecedents.

First, he asserts, pointing to an object his hearers don't know to be gold and don't know not to be gold, "If that *were* gold, it would be malleable". In this case, he is supposing the denial of (6); he is excluding from his presuppositions (5), (6), and (7); and he is concerned to emphasize (1).

Secondly, he asserts, pointing to an object he and his hearers agree to be cast-iron, "If *that* were gold, then some gold things would not be malleable". He is again supposing the denial of (6); he is excluding (1) and (6), but he is no longer excluding (5) or (7); and he is concerned to emphasize either (5) or (2).

Thirdly, he asserts, "If that were gold, then some things would be both malleable and not malleable". He is again supposing the denial of (6); he is now excluding (3) and no longer excluding (1), (5), (6), or (7); and he is now concerned to emphasize (1), (2), or (5).

Still other possibilities readily suggest themselves.

If, then, we were to ask "What if that were gold?" our question would have a number of possible answers—e.g., the subjunctive forms of the denial of (7), the denial of (1), and the denial of (4). Any one of these three answers might be appropriate, but they would not *all* be appropriate in conjunction. Which answer is the appropriate one will depend upon what we wish to know. If, in asking "What if that were gold?", we wish to know of some law statement describing gold, the denial

<sup>1</sup> Instead of saying his presuppositions include no statement he treats as a law statement it might be more accurate to say this: if his presuppositions include any statement N he would interpret as a nonlaw statement, then N and the man's supposition cannot be so formulated that the supposition constitutes a substitution-instance of N's antecedent.

of (7) is appropriate ; if we wish to know what are the properties of the thing in question, the denial of (1) is appropriate ; and if we wish to know whether the thing has properties such that a statement saying nothing gold has those properties is a law statement, the denial of (4) is appropriate. The counterfactual question, "What if that were gold?", is, therefore, clearly ambiguous. But in each case, the question could be formulated clearly and unambiguously.

Counterfactuals are similar to *probability* statements in that each type of statement is, in a certain sense, elliptical. If we ask, "What is the probability that this man will survive?", our question is incompletely formulated ; a more explicit formulation would be, "With respect to such-and-such evidence, what is the probability that this man will survive?" Similarly, if we ask, "What would American policy in Asia be if Stevenson were President", our question is incompletely formulated ; a more explicit formulation would be, "Supposing that Stevenson were President, and presupposing so-and-so, but not so-and-so, what would be the consequences with respect to American policy in Asia?" But there is an important respect in which counterfactual statements *differ* from such probability statements. If a man wishes to know what is the probability of a certain statement, i.e., if he wishes to know the truth of a categorical probability statement, then, we may say, he should take into consideration *all* the relevant evidence available to him ; the premises of his probability inference should omit no relevant statement which he is justified in believing.<sup>1</sup> But this "requirement of total evidence" cannot be assumed to hold in the case of counterfactual inference. If a man asks, "What would American policy in Asia be, if Stevenson were President?", and if his question may be interpreted in the way in which it ordinarily would be interpreted, then there are many facts included in his store of knowledge which we would expect him to *overlook*, or *ignore*, in answering his question ; i.e., there are many facts which we would expect him deliberately to *exclude* from his presuppositions. Normally we would expect him to exclude the fact that Eisenhower's program is the one which has been followed since 1953 ; another is the fact that Mr. Dulles is Secretary of State. But there are other facts, which may also be included in the man's store of knowledge, whose status is more questionable. Does he intend to exclude the fact that Congress was Republican ; does he intend to exclude those Asiatic events which have occurred as a result of Eisenhower's policies ; does

<sup>1</sup> Compare Rudolf Carnap, *Logical Foundations of Probability*, p. 211 ff.

he intend to exclude the fact that Stevenson went to Asia in 1953? There is no point in insisting either that he consider or that he exclude these facts. But, if he wishes to be understood, he should tell us which are the facts that he is considering, or presupposing, and which are the ones he is excluding. \*

Bradley suggested the ambiguity of some counterfactual statements may be attributed to the fact that "the supposition is not made evident" (*op. cit.* p. 89). In our terminology, it would be more accurate to say that the *presupposition* is not made evident; for the supposition is usually formulated explicitly in the antecedent of the counterfactual statement. (But when a man says, "If that thing, which is not S, were S . . . . .," the subordinate indicative clause expresses neither a supposition nor a presupposition.) Ideally it might be desirable to formulate our counterfactuals in somewhat the following way: "Supposing that that is S, and presupposing so-and-so, then it follows that that is P." In practice, however, it is often easy to tell, from the context in which a counterfactual is asserted, just what it is that is being presupposed and what it is that is being excluded! \* d/o

Although I have been using the terms "counterfactual" and "contrary-to-fact" throughout this discussion, it is important to note that, when a man arrives at a conditional statement in the manner we have been discussing, his supposition—and thus also the antecedent of his conditional—need *not* be anything he believes to be false. For example, a man in deliberating will consider the consequences of a supposition, taken along with certain presuppositions, and he will also consider the consequences of its denial, taken along with the same presuppositions. It is misleading to say, therefore, that the conditionals he may then affirm are "counterfactual", or "contrary-to-fact", for he may have no beliefs about the truth or falsity of the respective antecedents and one of these antecedents will in fact be true.<sup>2</sup> A better term might be "suppositional conditional" or, indeed, "hypothetical statement". \* Ns

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<sup>1</sup> "The Contrary-to-fact Conditional" (pp. 303-304; Feigl-Sellars, p. 494) I discuss what I take to be certain conventions of ordinary language pertaining to this point.

<sup>2</sup> Compare Alan Ross Anderson, "A Note on Subjunctive and Counterfactual Conditionals", *ANALYSIS*, Vol. 12 (1951), pp. 35-38; Roderick M. Chisholm, review of David Pears' "Hypotheticals", *Journal of Symbolic Logic*, Vol. 15 (1950), pp. 215-216.

## TRUTH AS A PREDICATE

By S. KORNER

I INTEND to show that the notion of truth is, even in ordinary and non-technical discourse, a predicate and that consequently Ramsey's theory together with later versions and elaborations of it must be rejected or very seriously qualified. The essence of Ramsey's theory is that "is true" and "is false" are not used as predicates of statements but that they "are phrases which we sometimes use for emphasis or for stylistic reasons, or to indicate the position occupied by the statement in the argument".<sup>1</sup> For my purpose it would be best to start with a general examination of the use of signs as predicates since this would, as I believe, not only prove my thesis but also confirm it by exhibiting its connection with other questions and answers in the field of the philosophy of logic and language. For the sake of brevity, however, I shall argue from a principle which has been used, e.g. by Kant, in the refutation of the ontological proof. Just as by means of this principle the notion of existence can be shown not to be a predicate so the notion of truth can be shown to be one.

1. The principle might be formulated as follows: a notion is a predicate if, and only if, it can be shown to be incompatible with some other notion the status of which as a predicate is undisputed. The notions of existence and non-existence are shown not to be predicates by showing that neither 'being a lion and existing', nor 'being a lion and not existing', neither 'being a unicorn and existing', nor 'being a unicorn and not existing', nor any other such conjunction is a contradiction in terms. Similarly, if we wish to prove that the notion of truth is a predicate of statements and that "is true" is not merely used as, say, a substitute for underlining them, then we shall have to show that some predicate of statements is incompatible with the notion of truth.

2. Making statements is a human activity which is governed by rules. Among the predicates which are applicable to any regulated activity and, therefore, also to the making of statements is a familiar relation between performances, rules, and persons, which I propose to call "appropriateness". By saying that a performance  $a$  is appropriate with respect to an agent  $A$  a judge  $B$  and a rule  $r$  I shall mean that (1)  $A$  performs  $a$  and  $B$  has

<sup>1</sup> *The Foundations of Mathematics*, p. 142.

adopted  $r$  and that (2) whoever were to perform it,  $a$  would conform to  $r$ . We may for our purpose assume that  $A$  and  $B$  are the same person or group of persons. There are many species of appropriateness which differ from each other according to the type of rule to which the performances are referred. If  $r$  were the law of the land we should speak of legal acts; if a code of polite manners, we should speak of well-mannered behaviour; if it were the set of rules governing the game of chess we should speak of correct moves, etc.

To assert that a performance is appropriate is thus to assert one proposition which clearly is empirical and another which clearly is not. Indeed the statement that whoever performed  $a$  would thereby conform to  $r$  is logically equivalent to an entailment-statement. To see this we assume that  $d(a)$  is a statement describing  $a$  and that  $i(r)$  is the indicative of  $r$ . It is then clear that 'whoever were to perform  $a$  would thereby conform to  $r$ ' entails, and is entailed by, ' $d(a)$  entails  $i(r)$ '. For example, let  $r$  be the rule that a debt should be paid;  $a$  an action which consists in the reluctant payment of a debt. It is then obvious that  $d(a)$ , i.e. 'a debt is being paid reluctantly' entails  $i(r)$  i.e. 'a debt is being paid'.

In other words, every appropriateness-statement is a conjunction of an empirical proposition with a non-empirical one, the latter being one which relates a performance to a rule. This relation is no less genuine than that of entailment or logical deducibility between statements.

3. Now statements are performances involving the use of signs in accordance with certain rules, and they are appropriate in senses varying with the rules to which they are referred. We speak for instance of their grammatical or idiomatic correctness or appropriateness. Here we have to consider the theoretical appropriateness of statements, which very roughly speaking is linked to their cognitive function. If we wish to give a more precise definition we must, as has to be done in the case of any species of appropriateness, characterise the rules to which the statements are referred when they are asserted to be theoretically appropriate.

This last is a lengthy undertaking and need not be attempted here. It is possible, however, to indicate briefly at least one type of rule which must be conformed to if any empirical statement is to be theoretically appropriate. Rules of this type are ostensive rules, and an example will be sufficient to see what they are. The statement 'the paper on which the preceding sentences are printed is white' is theoretically appropriate only if the mark



'white' is used in accordance with a rule to the effect that this mark is to be assigned to any object which resembles certain well identified objects and does not resemble certain others, say, parts of a colour chart. The more determinate our selection of rules, the more determinate does the predicate 'theoretically appropriate' become. In any case, by asserting that a statement is theoretically appropriate we assert (1) that a person is using certain signs and has adopted certain rules and (2) that the performance involving these signs would conform to these rules, whoever the performer might be. We make both an empirical statement and state a non-empirical relationship between a performance and a rule which has been shown to be no more spurious than that of logical deducibility between statements.

4. We may now consider any statement we like, e.g., the one quoted in the previous section. Clearly, to say of it "true but not theoretically appropriate" would be to be guilty of a contradiction in terms. In other words "true" and "not theoretically appropriate" are incompatible with each other. Since the various species of "appropriateness", including "theoretical appropriateness", and their negations are perfectly familiar predicates relating performances, persons, and rules, "true" is also a predicate—the test being the same as that by which "existing" is shown not to be a predicate. This, I think, concludes my case.

5. It seems worth while to try to explain how Ramsay's view may have arisen that "is true" is not used as a predicate but merely "for emphasis or for stylistic reasons. . .".

First, if somebody makes an appropriate move in a game of chess and if he or somebody else states that the move is appropriate, then these are two performances which can easily be distinguished since only the latter is a statement. If, however, somebody makes a statement and then he or somebody else asserts it to be true and, therefore, theoretically appropriate, *both* performances are statements. The two statements are, nevertheless, in most cases quite strikingly different: if  $p$  is an empirical statement it does not entail an entailment-statement. Yet, as we have seen, *any* statement of appropriateness and therefore of the truth of a statement entails an affirmative entailment-statement. Similarly the statement that  $p$  is logically compatible with  $q$  does not entail an affirmative entailment-statement while the statement that " $(p$  is logically incompatible with  $q)$ " is appropriate, certainly does.

Second, the non-empirical component of a statement of appropriateness, namely, the proposition that whoever were to



perform a certain action would, thereby, conform to a certain rule is, as we have seen, logically equivalent to an entailment-statement. Since such statements do not give us the same sort of information as empirical statements one might feel inclined to pronounce the harmless aphorism that entailment-statements give no information. It would, however, be preposterous to suggest that, therefore, the entailment relation is not a predicate and that whenever we seem to make an entailment-statement we emphasise some other proposition.

Thirdly, using the phrase "is true" as a predicate does not exclude its being used *at the same time* in other ways; and if we attend to these other uses we may feel inclined to ignore its use as a predicate. Mr. Strawson's interesting examples of other uses<sup>1</sup> are all at the same time also examples of uses of "is true" which could not without logical contradiction be extended into "true, but theoretically inappropriate". Indeed even from the point of view of ordinary language the thesis that "true" is a predicate seems in a better position than the thesis that "existence" is not: for do we not sometimes say quite properly of some persons that they do not really live but barely exist, and do we not often use "existing" and "alive" as cognate terms?

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## INCOMPATIBLE PROPERTIES

*By D. J. O'CONNOR*

"THIS is red' and 'this is blue' are incompatible. The incompatibility is not logical. Red and blue are no more *logically* incompatible than red and round. Nor is the incompatibility a generalization from experience."<sup>2</sup> Why is it that some properties can qualify the same subject at the same time and others cannot? And are the statements that affirm such incompatibilities analytic or factual or of some different type?

Consider the statement:

(1) Nothing can be both red and blue all over.

We admit at once that this statement seems indubitable and, further, that its truth is of such a kind that it cannot be strengthened by adducing instances in its favour. Experience will

<sup>1</sup> *Analysis*, vol. ix, 6.   <sup>2</sup> Lord Russell: *An Inquiry into Meaning and Truth*, p. 82.

*exemplify* from time to time the truth of such statements but it will not *confirm* it. For once we understand such statements we see that they stand in no need of confirmation. Indeed, to see this is to satisfy, in part, the criteria for saying that we do understand them.

In this, they behave very like the elementary truths of mathematics. No amount of counting can make us more certain that  $2+3=5$ ; and no amount of measurement will increase our conviction that the interior angles of a plane triangle total 180 degrees. Yet as we shall see, statements like (1) are in other ways very unlike truths of mathematics. This apparently inconsistent logical behaviour gives rise to philosophical difficulties. It seems obvious at first sight that statements, like the inhabitants of the organic world, can be sorted into 'natural kinds'; for example, into empirical and logical. The natural history of statements has been a favourite occupation of philosophers since the time of Locke. When we meet, as we often do, instances that are recalcitrant to being fitted into our system of classification, perhaps because they have affinities with the members of two mutually exclusive classes, we may take one of two courses. We may try to show that such instances are really disguised examples of one or other of the natural kinds already approved. Or, if they cannot be convincingly unmasked in this way, we postulate a further class to receive them.

Now (1) seems especially refractory to such treatment. For here we cannot obviously appeal either to empirical facts or to linguistic usage to support our claim that it shall be classed as empirical or as analytic. Yet to stop discussion at this stage by labelling it 'synthetic *a priori*' is in no sense an explanation of its oddities. (It is merely an epigrammatic summary of them.) Let us therefore look at it more closely and try to trace its affinities first with analytic statements and then with factual statements. Before we go on to this, however, it is worth noticing three features of (1) and of other statements like it. (i) They are universal negative statements and are therefore cast in a form that seems to invite us to refute them by producing counter-examples. But an attempt to refute them in this way could reasonably be construed as evidence that we had not really understood the statements.<sup>1</sup> (ii) It is hardly possible to frame a *general* statement to cover them that is not patently tautologous. (For example: 'Incompatible properties can never be co-instantiated'.) (iii) The properties that are asserted to be

<sup>1</sup> See D. F. Pears: "Incompatibilities of Colours" in *Logic and Language* (second series), edited by A. G. N. Flew.

incompatible are always determinate forms of the same determinable property. If we substitute in (1) for either 'red' or 'blue' a predicate standing for a determinate property of some determinable other than colour, we get for a *prima facie* logically true statement a factually false one for which counter-examples can easily be found. For instance:

(2) Nothing can be both red and hot all over.

Thus it seems that any properties that are incompatible in this apparently logical sense must be determinate forms of the same determinable. To assert:

(3) Nothing can be both blue and prime.

is not to assert a statement that is analytic in the same sense. For the negation of (3):

(4) Something is both blue and prime.

seems not so much logically false as meaningless. And if so, (3) must be vacuous rather than logically true.

Can we say that (1) is an analytic statement whose truth follows from the way in which its component terms are used? We might argue as follows. Since

(5) If anything is blue, then it is not red  
is true, we may deduce from (1)

(6) Nothing can be both red and not red.

Now (6) is analytically true. Since therefore (1) entails (6) and (6) is analytic, (1) must also be analytic. For if it were not, we should have the logical anomaly of an analytic conclusion following from premises that are not analytic. We have, of course, arrived at this result only with the help of an ancillary premiss, (5). We must therefore ask how this premiss is to be justified and what is its logical standing. For if it is analytic, then clearly (6) is analytic in virtue of (5) and there is no logical peculiarity about the argument. We could still claim that (6) is analytic and that (1) is not. But if we look at (5), it is easy to see that it has exactly the same logical status as (1). For (5) has the form:

(5') If anything is *F*, then it is not *G*.

And (1) has the *logically equivalent* form:

(1') It is false that anything is both *F* and *G*.

We might then be tempted to argue that (1) is analytic since it entails (6). But if we did argue in this way, we should be faced with a further difficulty. We believe (1) to be necessarily true and, following the argument of the previous paragraph, analytically so. Yet neither (1') nor (5') are analytic forms. As we have seen if we substitute in (1') and (5') for the predicate variables '*F*' and '*G*' any predicates except determinates of the same

determinable we get not a necessarily true statement but a factually false one. It therefore looks as though (1) is a necessary proposition whose necessity depends on its content and not on its form. And if this is so, must we not admit that it is synthetic *a priori*?

But may we not, without having to postulate synthetic *a priori* truths, explain (1) as analytic in the sense that its truth follows from the way in which its *descriptive* terms occur in it? It is this sense of 'analytic' that we might wish to claim for a proposition like:

(7) Nothing can be both a plant and a mammal.

(7) is analytic not in virtue of the rules of syntax governing the use of logical words like 'nothing', 'both . . . and' and so on like (6). It is apparently analytic in virtue of the semantic or designatory rules that govern the use of descriptive words like 'plant' and 'mammal'. And, in this, it might be asserted, it is just like (1) whose necessity is grounded in the semantic rules that govern our use of the words 'blue' and 'red'. Nevertheless there are important differences between (7) and (1). In the first place, terms like 'plant' and 'mammal' can be expanded into a verbal analysis and such an expansion when carried far enough will usually reveal a *logical* incompatibility in the expanded definitions of the two terms that we are comparing. For example, a schematic unpacking of the concepts 'plant' and 'mammal' could be represented thus:

'plant' — P & Q & R . . . . . & X

'mammal' — P & Q & S & . . . . . & not-X.

But 'red' and 'blue' and terms like them cannot be expanded in this way and can be defined only ostensively.<sup>1</sup> We therefore have no hope of showing that their incompatibility is logical. For if we can 'define' terms like 'red' and 'blue' only by pointing to their instances, we can do no more than point to demonstrate that they are incompatible properties.

Secondly, it appears that because of this first difference, (7) is not really necessarily true in virtue of its designatory rules at all. For a suitable verbal expansion of the descriptive terms of (7) shows that the incompatibility is due to *syntactical* causes, namely, to the fact that nothing can have the compound property 'P & Q & R . . . . & X & not-X'. It is clear that any such expansion of the meanings of incompatible *complex* properties will have in the end one of two outcomes. Either the incompatibility will be shown to be a logical one because the expansions of the two terms will include respectively a simple property and

<sup>1</sup> See D. F. Pears: *ibid.*

its negation; or it will be an incompatibility of the sort exemplified by (1) because the expansions include respectively a simple term like 'red' and another incompatible simple term like 'blue'. Thus instances like (7) cannot help us to solve the problem presented by (1) for either they are reducible to overtly analytic truths or to truths of the same type as (1).

In any case, the notion that a statement can be necessarily true in virtue of the semantic rules that govern the application of its descriptive terms is a queer one. For the sentences whose truth would ordinarily be said to be guaranteed by this sort of rule are precisely those sentences that are indubitably empirical and contingent. If I point to a piece of paper on the desk before me and say: "That is white", the truth of my utterance is guaranteed by a designatory rule such as "The word 'white' is used in English to refer to the colours of snow, milk, cherry-blossom and so on". Whereas if I say: "That is either white or not white" the truth of my utterance is guaranteed without any reference to the rules of designation. How can we say then that (1) is true (and indeed necessarily true) in virtue of such rules?

We might nevertheless try to show that semantic considerations are not irrelevant to the truth of (1) in the following way. It is certainly a fact about the way in which we use such terms as 'red' and 'blue' in English that these terms cannot have the same reference. It is therefore a rule in English that if we call something red, we may not also call it blue. This is not indeed a rule of designation but it is a rule that governs the way in which we assign certain descriptive predicates. It is, if you like, a second order rule of designation. Thus (1) may be interpreted not as a statement that can be said to be true or false but as a rule that can be appraised or criticized (as 'useful', 'appropriate', and so on.) Yet it is not a rule like "Call things with the colour of poppies, blood or cinnabar 'red'." For this is a pure convention that depends in no way on the nature of the referents of the term. We could interchange the uses of 'red' and 'blue' in English with only a few consequential adjustments in our uses of colour terms. But we could not so easily abandon the convention of using colour terms in accordance with (1). Let us see why this is so.

Consider the following case. I am asked (perhaps as an experiment in psychology) to sort colours under a limited number of labels, 'red', 'orange', and 'yellow' and so on and in the course of my sorting I class a certain shade as orange. Later I am asked to repeat the task so that my judgments can be checked



for consistency. I then class the same shade as yellow. If I am challenged to defend or to explain this discrepancy, I shall probably not say that both of my judgments were right (thus implying that the shade is both orange and yellow). Nor shall I say that either was wrong. It is more likely that I shall say "It doesn't matter which you call it" or "it might be either". Although in strict logic, if I deny that either of two statements is false, I am committed to saying that they are both true, such a logical rule has no application here. In saying "It might be either" I am saying that I do not know which semantic rule this instance falls under because there is no appropriate rule; and I am implying that if we want to talk consistently about this particular field of discourse, we shall have to invent such a rule. (For example: "Call that shade 'orange'"). Now if we invent a rule of this sort, it will be designed to serve the same purpose as any other designatory rule established in the natural growth of language, namely, to make our references unambiguous. We could just as easily have a rule: "Call this shade both yellow and orange." But this would not be constructing a counter-example for (1), for we should merely be distinguishing three colours instead of two, namely, yellow, yellow-and-orange, and orange. And the effect of this would be that

(8) Nothing can be both orange and yellow all over would be more firmly established than ever because the ambiguous cases would now be legislated for.

Suppose then that we treat (1) not as a necessarily true statement but as a higher order rule of designation. This has the advantage that we do not now have to say: "Let us suppose (1) to be falsified." We cannot do this without producing counter-examples, and it is the very fact that it is logically impossible to produce counter-examples that renders (1) so puzzling. Whereas if we treat (1) as a rule of language, we gain two advantages. (i) We can now see why it is impossible to offer counter-examples or even to start looking for them. We cannot do so because by accepting (1) as a rule *we have agreed not to do so*. We should certainly be misunderstanding (1) if we started a search for such counter-instances but not because we should be mistaking a necessary proposition for an empirical one. We should be mistaking a rule for a statement. (ii) We can ask ourselves what would happen if we abandoned this rule of language and then describe what the situation would be. This description will have all the logical effect of our wished-for counter-examples and more; for it will show us what force the rule has.

If then we were to abandon (1), we should be unable to ex-



press in our language any colour discriminations in that part of the spectrum between, say, scarlet and pure blue. Of any shade falling within this range we should just have to say "Call it red or blue—it doesn't matter which" or "It's both red and blue—those are just two ways of saying the same thing." In other words, we should be making the words 'red' and 'blue' *synonymous*, thus rendering one or the other of the two terms unnecessary. We could say of a certain shade "it's both red and blue" in the same way as we might say of a certain flower "It's both a snapdragon and an antirrhinum." (Normally of course, we do not use locutions of this kind except to draw attention to the fact that two terms are synonyms.)

Thus the puzzle about (1) arises from the fact that we have made the statement necessary by adopting it as a rule and have then forgotten that it is a rule, perhaps because its expression in the indicative mood and not in the imperative or subjunctive has made it easy for us to forget it. We can always, if we wish, renounce such rules, thus making our language cruder and less able to pick out the variety of the world. Though it is a necessary condition of having a language at all that there should be *some* rules of this kind, any particular rule can be abandoned at the cost of impoverishing our language and blunting its sensitivity to a certain area of discourse.

Does this 'solve' the problem about the incompatibility of properties? It certainly does not do so in the sense that an appreciation of the fact that statements like (1) are really disguised higher order rules of designation relieves us of all the puzzlement that we feel about such statements. We still want to insist that all this talk about language rules is beside the point. It is the nature of the properties themselves that we feel to be the basis of the incompatibility and not anything in the way in which we talk about them. Otherwise, how could it happen that blue and red are incompatible and blue and cold are not? Does not the necessity that we recognise in (1) reside in nature and not in language at all except in so far as language mirrors nature? Or is not the rule, if rule it is, based upon the way in which properties *behave*? For clearly we cannot make properties incompatible by edict. We just find them to be so.

To dispose of this suggestion, what we have to do is to realize what is involved in calling (1) a higher order rule of designation and we can do this only by becoming accustomed to this way of regarding such sentences. But we can reinforce the argument for looking at (1) in this way by seeing how little light the empirical facts in question throw upon the problem. It is

indeed true that no property can be other than it is ; and if to recognize this truth is to assent to a synthetic *a priori* proposition, then there is at least one such proposition, namely, the Principle of Non-Contradiction. But that principle is not at issue in this discussion. For it is presupposed, as Aristotle showed, in any discussion whatever. What we are asking is why some properties are, in Leibniz's term, compossible and others are not. If we wish to answer this question without reference to language, all we can say is this : there are many different properties in the world and no one of them can be other than it is. This, to be sure, is not very illuminating, but it is a complete summary of all the empirical facts involved. But is it not also a fact that red and blue are incompatible? For they did not first become so when they were given linguistic recognition. The answer to this is that the incompatibility of red and blue is certainly a fact about them but it is not a fact additional to their being determinate forms of the same determinable property, that is, it is not a fact over and above the fact that they both have the natures that they respectively possess. That the same surface cannot be simultaneously both blue and red is no more mysterious than that it cannot be ten square feet in area and, at the same time, twenty square feet. We do not postulate any modalities in nature to explain the second fact nor entitle the statement that asserts it to the rank of "synthetic *a priori*". Nor need we do so for the first fact either.

Thus anyone who asks for an explanation of the incompatibility of red and blue that shall lie in the natures of the properties themselves and not in the way in which we talk about them can only be advised to use his eyes and to reflect on the Principle of Non-Contradiction. This will, indeed, not tell him much for such looking and reflecting can give him no information that he does not already possess. But the advice would not be pointless ; for to realise that there is no further empirical information to be gained will lead him to understand that no scrutiny of the facts will help to solve the problem and that nothing both new and relevant can be said about them. It might be useful to add that a universe in which there were no incompatible properties is logically possible and can therefore be described. It would simply be a universe in which there was no distinction between determinable and determinate properties because no determinable property was instantiated in more than one determinate form. But this merely brings out the fact that has been noted already, namely, that to say that two properties are incompatible is merely to say that they are determinates under the same determinable. Thus anyone who looks for an empirical solution

of the problem that will point to some occult working of incompatible properties that escapes the attention of casual observers is bound to be disappointed.

However, it may also happen that an objector who will not be convinced that empirical considerations are irrelevant is asking, in a roundabout way, for a justification of the semantic regulation embodied in (1). For rules of designation relate language to fact. This sort of answer can certainly be given and, in fact, it has been given already in a brief form when it was said above that the regulation is necessary if we are to be able to talk about these properties and to distinguish and contrast them. But when we have pointed to the facts and evaluated the ways in which these facts are communicated, there can be nothing left to say.

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## PUTNAM ON SYNONYMY AND BELIEF<sup>1</sup>

*By WILFRED SELLARS*

IN his recent note on "Synonymy and the Analysis of Belief Sentences"<sup>2</sup> Hilary Putnam, following Benson Mates,<sup>3</sup> develops the following argument:

(1) Suppose we use "Greek" and "Hellene" as synonymous.

(2) Then, on any current theory of synonymy,

(D) All Greeks are Greeks

(D') All Greeks are Hellenes

are synonymous,

(3) as are

(S) Whoever believes that all Greeks are Greeks believes that all Greeks are Greeks

(S') Whoever believes that all Greeks are Greeks believes that all Greeks are Hellenes.

(4) Now, it is "quite likely" that nobody doubts that *whoever believes that all Greeks are Greeks believes that all Greeks are Greeks*.

<sup>1</sup> This paper was already submitted to *Analysis* before I had an opportunity to see Prof. Alonzo Church's "Intensional Isomorphism and Identity of Belief", (*Philosophical Studies*, 5, 1954) which reaches the same (or similar) conclusions by a slightly different route.

<sup>2</sup> *Analysis*, April, 1954, pp. 114-122.

<sup>3</sup> "Synonymy", *Univ. of California Publications in Philosophy*, 25, 1950, pp. 201-226; reprinted in *Semantics and the Philosophy of Language*, ed. by L. Linsky, Univ. of Illinois Press, 1952.

(5) But it is "quite easy" to suppose that somebody does doubt that *whoever believes that all Greeks are Greeks believes that all Greeks are Hellenes*, though Putnam, for one, does not doubt it.

(6) Accordingly

(e) Nobody doubts that whoever believes that all Greeks are Greeks believes that all Greeks are Greeks

and (f) Nobody doubts that whoever believes that all Greeks are Greeks believes that all Greeks are Hellenes

"may quite conceivably have opposite truth values and so cannot be synonymous."<sup>1</sup>

(7) But on current theories of synonymy the synonymy of (e) and (f) follows from that of "Greek" and "Hellenes".

(8) Consequently, given these current theories and additional premises which seem beyond dispute, the assumption that "Greek" and "Hellenes" are synonymous leads to the conclusion that they are not synonymous,—and similarly in the case of any other pair of different terms.

(9) Thus, in terms of current theories of synonymy "there is but one conclusion to which we can come: 'Greek' and 'Hellenes' are not synonymous, and by the same argument neither are any two different terms".<sup>2</sup>

To remedy this situation, Putnam proposes a new theory of synonymy according to which the synonymy of (e) and (f) does not follow from that of "Hellenes" and "Greek". For whereas, on his theory, the synonymy of "Hellenes" and "Greeks" entails the synonymy of

(D) All Greeks are Greeks

and (D') All Hellenes are Hellenes  
it does not entail that of

(D) All Greeks are Greeks

and (D') All Greeks are Hellenes.

Now the truth of the matter is that the argument summarized above rests on a simple mistake. And if Putnam had asked himself *why* he does not doubt that *whoever believes that all Greeks are Greeks believes that all Greeks are Hellenes*, he would undoubtedly have discovered his mistake, and saved himself a considerable expenditure of ingenuity.

The key to the puzzle is the initial stipulation: "Suppose *we* use 'Hellenes' . . . as a synonym for 'Greek'."<sup>3</sup> All right, suppose *we* do—Putnam, myself and the rest of us. It follows, of course, that

<sup>1</sup> *loc. cit.*, p. 117.

<sup>2</sup> p. 117.

<sup>3</sup> p. 117 (my italics).

(1) George is a Greek  
 and (2) George is a Hellene  
*asserted by us*, necessarily have the same truth value. It follows equally, though it may take a moment to appreciate the fact, that  
 (3) Jones believes that George is a Greek  
 and (4) Jones believes that George is a Hellene  
*asserted by us*, necessarily have the same truth value. That is to say, they necessarily have the same truth value if we are making a simple use of "Greek" in the one case, and "Hellene" in the other, to formulate what it is that we take Jones to believe. On this assumption, the truth of (3) does not pre-suppose that Jones uses the word "Greek", nor the truth of (4) that he uses the word "Hellene," nor the joint truth of (3) and (4) that he has two words by which to refer to the inhabitants of Greece.

Consider now

(5) Jones believes that all Greeks are Greeks  
 and (6) Jones believes that all Greeks are Hellenes.  
 Here we must be cautious. We must remind ourselves that sentence (6), even as a sentence in *our* language may well have more than one employment. Thus, when we use (6) to make a true assertion, *who* is using the words "Greeks" and "Hellenes"? Are *we* making a straightforward (a pure *using* use) use of these words to formulate what Jones believes, as we would be making a straightforward use of "disease" and "curable" if we said

(7) Jones believes that all diseases are curable.  
 Or are we making a disguised *mention* (a covert *mentioning* use) of the words "Greek" and "Hellene" *as used by Jones*, so that (6) is equivalent, in effect, to

(6') The sentence "all Greeks are Hellenes" as used by Jones expresses something that he believes.

Clearly it is only on the former supposition that the question "Does the synonymy of (5) and (6) as sentences in our language follow from the synonymy, in our language, of 'Greek' and 'Hellene'?" is a relevant question to ask.

It can, indeed, be doubted that anyone would ever use (6) without intending to refer to Jones' use of "Greek" and "Hellene". But what can be said is that if (6) is used as on the former supposition,—if, that is, our sole purpose in using (6) rather than (5) is the stylistic one of not wishing to use the same word twice—then any grounds we might have for asserting (5) would equally be grounds for asserting (6) and vice versa. Exactly the same considerations recur in the case of

- (8) Whoever believes that all Greeks are Greeks believes that all Greeks are Greeks.  
 and (9) Whoever believes that all Greeks are Greeks believes that all Greeks are Hellenes.

Putnam tells us that while *he* does not doubt that whoever believes that all Greeks are Greeks believes that all Greeks are Hellenes, "It is easy to suppose that someone *does* doubt this." But it should now be clear that it is easy to suppose this only if one is using (9), and in particular the phrase "believes that all Greeks are Hellenes", in such a way that it contains a covert *mention* of the words "Greek" and "Hellene".<sup>1</sup> For if we make what we have called a 'pure using use' of

- (10) X doubts that whoever believes that all Greeks are Greeks believes that all Greeks are Hellenes  
 it formulates (for us) exactly the same proposition as  
 (10) X doubts that whoever believes that all Greeks are Greeks believes that all Greeks are Greeks.

and it is *not* easy to suppose that there is a value of 'x' for which (10) obtains.

Yet it *can* be supposed. Thus, even so interpreted as to be relevant to the problem,

- (f) Nobody doubts that whoever believes that all Greeks are Greeks believes that all Greeks are Hellenes.  
*may be false.* On the other hand,  
 (e) Nobody doubts that whoever believes that all Greeks are Greeks believes that all Greeks are Greeks

*may be true.* But it would be a howler to infer that the combination (e)-true-and((f)-false could obtain. For given the initial premise of the discussion (the synonymy in our usage of "Greek" and "Hellene") and the relevant interpretation of belief (and doubt) sentences, this would be equivalent to the overtly self-contradictory combination (e)-true-and-(e)-false.

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<sup>1</sup> Putnam races to meet this confusion. Thus, what he actually writes is:

Now I do not doubt that 'whoever believes that all Greeks are Greeks believes that all Greeks are Hellenes' is true; but it is easy to suppose that someone *does* doubt this. . . .

By using the semantical form "'...' is true" Putnam mentions the relevant expressions and by failing to stipulate that the 'someone' in question uses the words "Greek" and "Hellene" as *we* do Putnam indeed makes it easy to suppose that this 'someone' is doubtful of what *he* ("someone") uses (9) to express.

#### Correction

Vol. 15, p. 95, l. 25: for *n* read *n*-1.



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